

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims:

Claim 1 (Currently Amended): A flat panel speaker unit comprising, within a frame:

- a transparent single diaphragm for outputting sound;
- a vibration generating part arranged on the peripheral portion of the diaphragm to directly drive the diaphragm for vibration; and
- a display device disposed inward of the diaphragm, for displaying information;

the diaphragm and the display device being stacked with a gap therebetween so that an image on the display device can be viewed through the diaphragm, and the diaphragm being fixed to the frame by mounting a peripheral portion of the diaphragm onto the frame, and

the vibration generating part includes a coil and a magnet, either one of which is mounted on the diaphragm and the other is mounted to the frame;

wherein locating nubs, protruding downwardly, are formed on the peripheral portion of the diaphragm, and the coils are fitted onto the locating nubs on a lower face of the diaphragm.

Claim 2 (Previously Presented): The flat panel speaker unit as set forth in claim 1, wherein:

- a plurality of the vibration generating parts is furnished adjacent a peripheral edge of the display device.

Claim 3 (Canceled)

Claim 4 (Previously Presented): The flat panel speaker unit as set forth in claim 1, wherein:

- the vibration generating part is arranged outward of the display device;
- an electric wire or a flexible circuit board extending outward of the frame is connected to the display device or the vibration generating part; and
- a through hole is provided in the frame between the display device and the vibration generating part.

Claim 5 (Previously Presented): The flat panel speaker unit as set forth in claim 4, wherein the electric wire or the flexible circuit board is drawn outside the frame through the through hole.

Claim 6 (Previously Presented): A flat panel speaker unit comprising, within a frame:

- a transparent single diaphragm for outputting sound; and
- a vibration generating part including a coil and a magnet, for vibrating the diaphragm;
- a display device disposed inward of the diaphragm for displaying information;
- either one of the coil and magnet is mounted on a peripheral portion of the diaphragm,
- a central portion of the diaphragm which fully covers an underlying display is thicker than the peripheral portion of the diaphragm to which the vibration generating part is mounted,
- the coil of the vibration generating part being coiled more laterally than vertically, and
- causing the diaphragm to vibrate by receiving magnetic flux lines, among the magnetic flux lines emitted from the magnet, that are diagonal or parallel with respect to the diaphragm.

Claim 7 (Canceled)

Claim 8 (Previously Presented): The flat panel speaker unit as set forth in claim 6, wherein a step is formed at the boundary of the peripheral portion and the central portion of the diaphragm.

Claim 9 (Previously Presented): The flat panel speaker unit as set forth in claim 6, wherein the central portion of the diaphragm is made thicker than the peripheral portion by attaching a reinforcing plate onto the central portion.

Claim 10 (Original): An electronic device comprising a flat panel speaker unit as set forth in claim 1.

Claim 11 (Original): An electronic device comprising a flat panel speaker unit as set forth in claim 6.

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U.S. Patent Application Serial No. 10/553,624
Response to Final Office Action of November 28, 2007

AMENDMENTS TO THE CLAIMS:

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Claim 1 (Currently Amended): A flat panel speaker unit comprising, within a frame:
a transparent single diaphragm for outputting sound;
a vibration generating part arranged on the peripheral portion of the diaphragm to directly drive the diaphragm for vibration; and
a display device disposed inward of the diaphragm, for displaying information;
the diaphragm and the display device being stacked with a gap therebetween so that an image on the display device can be viewed through the diaphragm, and the diaphragm being fixed to the frame by mounting a peripheral portion of the diaphragm onto the frame, and
the vibration generating part includes a coil and a magnet, either one of which is mounted on the diaphragm and the other is mounted to the frame.

Claim 2 (Previously Presented): The flat panel speaker unit as set forth in claim 1, wherein:

a plurality of the vibration generating parts is furnished adjacent a peripheral edge of the display device.

Claim 3 (Previously Presented): The flat panel speaker unit as set forth in claim 2, wherein locating nubs are formed on the peripheral portion of the diaphragm, and the coils are fitted onto the locating nubs on a lower face of the diaphragm.

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JUL 21 2008

*Patent Application Serial No. 10/553,624
Response to Office Action of April 30, 2008***AMENDMENTS TO THE CLAIMS:***This listing of claims will replace all prior versions, and listings, of claims:*

Claim 1 (Currently Amended): A flat panel speaker unit comprising, within a frame:
a transparent single diaphragm for outputting sound;
a vibration generating part arranged on the peripheral portion of the diaphragm to directly drive the diaphragm for vibration; and
a display device disposed inward of the diaphragm, for displaying information;
the diaphragm and the display device being stacked with a gap therebetween so that an image on the display device can be viewed through the diaphragm, and the diaphragm being fixed to the frame by mounting a peripheral portion of the diaphragm onto the frame, and
the vibration generating part includes a coil and one of which is mounted on the diaphragm and the other is mounted to the frame;

wherein locating nubs protruding downwardly are formed on the peripheral portion of the diaphragm, and the coils are fitted onto the locating nubs on a lower face of the diaphragm.

Claim 2 (Previously Presented): The flat panel speaker unit as set forth in claim 1, wherein:
a plurality of the vibration generating parts is furnished adjacent a peripheral edge of the display device.

Claim 3 (Canceled)